

***BRADLEY LINEBACKER
SYSTEM TRAINING PLAN (STRAP)
Revision 2***

**UNITED STATES ARMY AIR DEFENSE ARTILLERY SCHOOL
DIRECTORATE OF TRAINING and DOCTRINE**



***For the BRADLEY LINEBACKER WEAPON SYSTEM, this STRAP, Revision 2, supersedes the
Bradley Stinger Fighting Vehicle (BSFV) and the Bradley Linebacker STRAP (7 Jul 98).
PROPONENT: United States Army Air Defense Artillery School, Fort Bliss, TX 79916.***

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BRADLEY LINEBACKER STRAP
Revision 2

This STRAP, Revision 2, of the existing TRADOC-Approved Bradley Stinger Fighting Vehicle (BSFV) and Bradley Linebacker STRAP (July 1998) is the Bradley Linebacker system *single-source* training plan.

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1. Bradley Linebacker (BL) System

a. Description

The initial Linebacker build is a short range air defense (SHORAD) Stinger missile system configured on an Operation Desert Storm (ODS) Bradley Fighting Vehicle (BFV/M2A2). In the summer of 1998, the BL will begin to replace the fielded SHORAD Bradley Stinger Fighting Vehicle (BSFV). As the BFV upgrades to the M2/A3 vehicle, future Linebackers (fielding to begin in 2003) will eventually replace the ODS M2/A2 which will roll down to replace any remaining active Army BSFV units. The standard vehicle mounted launcher (SVML) carrying 4 Stinger missiles is added to the 25mm gun turret, eliminating the tube-launched, optically-tracked, wired-guided (TOW) missile which is standard to the BFV and the BSFV. In addition to the Stinger launching system, the Linebacker carries standard Bradley Fighting Vehicles weapons: the 25mm gun and 7.62 coaxial machine gun. The Linebacker system allows shoot-on-the-move and slew-to-cue capability, replacing the BSFV "MANPADS-Under-Armor (MUA) Dismounted Stinger Team" employment concept.

The Linebacker's combined arms mission is to provide air defense force protection to forward area heavy maneuver combat forces, combat support elements, and other critical assets from attack by enemy Rotary Wing (RW), Fixed Wing (FW), Unmanned Aerial Vehicles (UAVs), and Cruise Missiles (CMs). Air Defense battalions in the heavy divisions employ the BL. The Linebacker provides heavy maneuver forces with dedicated air defense fire power: the modified fire control subsystem fires the Stinger missile from the turret while the four-man squad remains under armor and on the move. Targeting data is provided by Forward Area Air Defense (FAAD) Command, Control, Communications and Intelligence (C³I). This C³I complement provides early warning/alerting, the complete air picture, slew-to-cue, and target identification friend or foe (IFF).

The 25mm chain gun contributes adjunct air defense firepower and, as with the 24CD 7.62 coax machine gun, provides self-defense. In the event of launcher system damage or failure or should the maneuver force commander choose to employ the Linebacker in a static mode, the system maintains dismounted Stinger missile capability.

b. First Unit Equipped Date (FUED): Projected FY99, 3ID

2. Target Audience

The Bradley Linebacker training audience consists of entry level 14R operators/crew members and SHORAD commissioned and warrant officers attending the basic and advance courses. Initial soldier training as well as officer training is conducted at the US Army Air Defense Artillery School. The advent of the Linebacker impacts the system maintenance training bases for the 45T and 27T initial training at the Ordnance School (USAOC&S) and the Missile and Munitions School (USAOMMCS). Subsequent to new equipment training (NET), the unit will sustain Linebacker crew member training using the training support package (TSP) and training devices provided during NET. During the life cycle of the fielding process, the 14R BSFV-trained soldier who is assigned to a Linebacker unit will have the sustainment TSP available for Linebacker peculiar training at the unit.

3. Assumptions

- The Linebacker crew of four 14Rs (a Bradley commander, gunner, driver, and missile loader) replaces the BSFV five-man crew.

- Linebacker training development resources, manpower, equipment and Bradley Linebacker associated FAAD C³I equipment will be available to support Linebacker training and training development over the life-cycle of the system.
- The Bradley Fighting Vehicle (M2A2 ODS/M2A3) associated TADSS will be provided to the units concurrent with system fielding schedules; and the M2A2 ODS and A3 Linebacker-specific TADSS will be developed in conjunction with the materiel development and provided to the unit concurrent with the system fielding.
- Military Occupational Specialties (MOSs) 45T, Bradley Fighting Vehicle Systems Turret Mechanic, and 63T, Bradley Fighting Vehicle Systems Hull Mechanic, will be approved prior to resident training start dates as the unit maintainers for all portions of the Bradley Linebacker except the Stinger weapon portion. The length of the required training will be limited to an orientation of the equipment variants.
- Military Occupational Specialties (MOSs) 45B, Small Arms Repairer; 45G, Fire Control Repairer; 45K, Armament Repairer; 63G, Fuel/Electrical Systems Repairer; 63H, Track Vehicle Repairer will be approved prior to resident training start dates as the Direct Support/General Support (DS/GS) maintainers for all portions of the BL except the Stinger weapon portion. The length of the required training will be limited to an orientation of the equipment variants.
- Military Occupational Specialty (MOS) 27T, Avenger System Repairer, will be approved prior to resident training start dates as the DS/GS maintainer for the BL Stinger weapon portion. The length of the required training will NOT EXCEED the existing 27T program of instruction (POI).
- Characteristics of the target audience will not change.
- Logistics Support Analysis (LSA) will be developed beyond unit level.
- The materiel developer will provide the required operator and maintainer BL ODS M2/A2 and BLA3 new equipment training (NET); training equipment and devices; training support materials/packages; and provide the resources and the required courses of instruction for Instructor and Key Personnel (I&KP) training prior to the resident training start date.
- CASCOM is the training developer for the USAOC&S and USAOMMCS.
- The ADA community will resource force structure positions for maintenance MOSs in the BL ADA battery.
- There will be no additional personnel required at the DS/GS level in support of the BL.
- The materiel developer will develop a New Equipment Training Plan (NETP).
- No maintenance or operator institutional transition courses will be developed.

4. Training Constraints

The USAADSCH BL training programs' restrictions/limitations are derived from new equipment requirements, existing and new training device's usage, and the development of new or modified equipment training courses and products. The following constraints directly affect the conduct of training:

- Availability of funds for new BL M2A2 ODS and A3 training devices for the training base and the field.
- Availability of funds for modification of existing BFV training devices for the ADA training base or ADA units in the field.

- Availability of funds and military personnel for the development and presentation of the Doctrine and Tactics Training (DTT).
- Availability of funds for production of the multimedia TSP for the BL portion of NET, 14R and 27T.
- Availability of BL-trained personnel to support the training base for USAOC&S, USAOMMCS, USAADASCH.
- Availability of funds to support tools, personnel training, training equipment, and Associated Support Items of Equipment (ASIOE) Availability.
- Availability of BL Qualitative and Quantitative Personnel (QQPRI) data.
- Availability of BL Basis of Issue Plan (BOIP) data.
- Availability of funds and personnel to support New Equipment Training (NET) for the BL FY99-08 fielding schedule.
- Availability of BL M2A2 ODS mod kits for USAOMMCS tactical turret training device and the 2 Linebackers issued to OMMCS.
- The Bradley Linebacker will be instrumented for training at the Combat Training Centers (CTC) and Home station Instrumentation Training Systems (HITS).

5. Training Concept (AC/RC)

a. New Equipment Training (NET) Concept

The Linebacker new equipment training concept couples the Linebacker capabilities with Bradley A2M2 ODS training. The NET concept is implemented through the materiel developer's requirement to provide new equipment training and training support products for the life cycle of the system. The training design ensures that the Linebacker training includes, but is not limited to, Instructor & Key Personnel Training (I&KPT) for both the *operator* and *maintainer* proponents; individual and collective task analysis; training equipment for the institution; and institutional and unit TADSS. This training also includes the development of Bradley ODS and Linebacker-peculiar (air defense specific, both operator and maintainer) instruction designed as an exportable multimedia training package, complete with a digitized POI, lesson plans, technical manuals, student and instructor guides, and a course management plan. The TSP will include a self-taught "how to" tutorial module and a diagnostic test module that permits identification of soldier training proficiency by module. The TSP will be used during the course of NET instruction and left with the unit as part of the equipment fielding/training process.

The trainers for FY98 NET schedule are a team of Armor, Ordnance and Air Defense NCOs and officers. Doctrine and Tactics Training (DTT) follows operator and maintainer instruction. NET culminates when the unit commander, upon completion of the required unit collective training event, provides written certification that his unit is fully trained. This NET concept is applicable to both the M2A2 ODS and A3 Linebacker and is required to be developed per the following design:

- Systems Approach to Training (SAT) process.
- Distance Learning /multimedia instructional design concepts applied.
- Concurrent with the system hardware /software; validated during the system Operational Test.

b. Institutional Training Concept

The US Army Air Defense Artillery School (USAADASCH) is the proponent for the 14R Bradley Linebacker operator institutional training. The training concept builds on the existing BSFV POI and prepares the air defense soldier to qualify as a skill level one 14R crew member through completion of Advanced Individual Training (AIT) at Ft. Bliss, TX. In order to ensure accurate, cost-effective training occurs, the materiel developer must provide institutional TADSS with the fielding of the Linebacker system to the institution. The combination of institutional and unit training strategies as outlined in the 14R Soldier Training Publication completes the training mix that is designed to prepare the 14R for each level of skill progression. Soldiers currently in the 14R MOS who are assigned to a Linebacker equipped unit can receive Linebacker specific training through the unit sustainment training program. After completion of AIT, unit sustainment training, or new equipment training (NET), the soldier is capable of performing respective skill level tasks to standard.

USAADASCH Officers' Basic and Advanced Courses (OBC/OAC/WOAC) include instruction for the BL and prepare air defense officers to perform as SHORAD leaders. All Linebacker associated training and training products prepare the ADA leader, soldier, and unit to execute force protection operations in the combined arms warfighting arena.

BL impacts the training bases of the Ordnance Center and School (USAOCS) and the Ordnance Missile and Munitions Center and School. Those proponents will share responsibility for 45T turret and 27T Stinger system maintenance training. The training concept is to train unit and direct and general support maintainers at initial entry in the institution through the use of lesson materials, multimedia NET training support products provided by the materiel developer, and TADSS.

c. Unit Training Concept

After the newly equipped units receive NET and DTT, the commander trains collective tasks against the standards published in the BL ARTEP manuals. Completion of this training exercise along with the other training components of NET leads to initial operational capability verification. Once the unit is fully operational, the commander's unit training plan describes programs to accomplish the sustainment of individual and collective tasks using the NET training support packages; training publications; TADSS; targets; and ammunition and missiles. The introduction of the Linebacker causes a change to the Combined Arms Training Strategy (CATS) by combining the Stinger and BFV skills. FM 23-1 Gunnery tables are being written and will include 25mm and Stinger aerial gunnery for Linebacker crews. All unit training is based on each unit's METL, gunnery tables, and the Linebacker Combined Arms Training Strategy (CATS) (currently *in revision and being written per* the final/approved revision of Chapter 14, FM 23-1).

d. Reserve Component (RC) Concept

At this time, force modernization strategies do not include distribution of the Linebacker to the reserve component.

6. Training Strategy (AC)

a. NET Strategy

The BL NET strategy is based upon the materiel developer's requirement to provide new equipment training and training products for new and modified system. The materiel developer works in conjunction with the training developer to design and publish a New Equipment Training Plan (NETP) that encompasses a variety of training subsystems for the user/customer community.

NET courses of instruction include I & KP training for the ODS components and BL operations and maintenance. NET for the fielded unit is for both the operator and maintainer. The new training requirement is limited to ODS specific and Linebacker air defense peculiar training. The BL I&KP and FUE NET associated prerequisite training includes: ODS; Precision Lightweight GPS Receiver (PLGR); Simplified Handheld Terminal Unit (SHTU/HTU); Single Channel Ground and Airborne Radio System (SINCGARS); and Enhanced Position Location Reporting System (EPLRS) training. ODS NET is in place

for FY98. It is provided through the Bradley Program Manager. The POI is supported with training products that will include an exportable, multimedia training support package (desired, however, yet to be developed), (left with the unit) for all trained tasks. The Air Defense Command and Control Systems Program Manager (ADCCS-PM) will support PLGR, SHTU/HTU, SINCGARS and EPLRS training.

Due to the recent changes to the combined-arms New Equipment Training Team (NETT), the NET instructor base is composed of the following mix of military personnel:

- Air Defense School personnel will train the Bradley Linebacker operator training *and* the Operation Desert Storm. (ODS) modifications to the Bradley.
- Armor School provides the Bradley ODS hull maintenance training.
- Ordnance Center and School and the Ordnance Missile and Munitions Center and School provide the Stinger missile/Linebacker turret maintenance training.

The following schedules are for all courses provided by the materiel developer in support of the conduct of BL new equipment training:

- Bradley Operation Desert Storm (ODS) I&KP

The US Army Infantry School Bradley New Equipment Training Team will instruct and certify ODS training for the NET instructor base. The course will be conducted at Fort Benning in March/April 98 time frame

- Bradley Linebacker Maintenance Instructor and Key Personnel Training

United Defense, LP will conduct the BL Maintenance I&KP Training at Ft. Bliss, TX during the June/July 98 time frame. There will be 2 iterations of the training; each class is limited to 10 students. BL NETT members have attendance priority; the remaining spaces are available for the proponent school instructors and training developers. Prerequisite training for the Maintenance I&KP training is the same as the Operator I&KP pre-training.

- Bradley Linebacker Operator I&KP Training

Boeing Corporation will conduct BL Operator I&KP Training at Ft. Bliss, TX during the June/July 98 time frame. There may be 2 iterations of the training (depending on the numbers of people who need the training); each class is limited to 10 students. The BL New Equipment Training Team (NETT) members have attendance priority; the remaining spaces are available for the proponent school instructors and training developers.

- Bradley Linebacker Operator and Maintainer NET Schedule

The first BL NET is scheduled for the Institution in August 1998. The remaining BL NET will follow the system fielding schedule. The Linebacker A2 ODS NET will be completed when the last unit is fielded in FY00. The NETT will perform an analysis of skills demonstrated by personnel assigned to the unit. This analysis will be used in evaluating training effectiveness, as discussed in paragraph 9 of this STRAP. The Linebacker A3 NET schedule will follow that system's fielding plan. For a specific NET schedule, refer to the PM managed Bradley Linebacker NET Plan.

- Doctrine and Tactics Training (DTT)

In conjunction with the training development assistance of the USAADASCH, the BL Program Manager has a requirement to provide BL DTT as part of the NET package. The tactics, techniques, and procedures training follows the operator/maintainer training and comes before the unit collective training event. It is based upon the current SHORAD TTP for the FORCE XXI environment and supports the organizational concepts of an ADA Battery and Battalion in a Heavy Division.

Upon completion of the training, the unit receives a TSP for use during collective training. This package should include, but not be limited to DTT training materials, crew drills, and Field Manuals (FMs).

- **Collective Training Event**

Conducted by the commander, the collective training event is usually a 3-5 week process culminating with an ARTEP and a gunnery exercise. Initial Operational Capability (IOC) is then declared when the BL crews are trained/qualified against gunnery tables, CALFEX, and FTXs/ARTEP standards.

b. Institutional Training (Warrior)

Training is developed per the guidance in TRADOC Regulation 350-70 and designed to be safe, battle focused, derived from wartime missions, and based on BL/SHORAD doctrine. The institutional training design is based upon the following criteria:

- Instruction is performance-oriented, emphasizes hands-on practical exercises, and prepares SHORAD soldiers and units to achieve and sustain proficiency on individual and collective tasks. Standards are established per the Mission Essential Task List (METL), the Army Training and Evaluation Program (ARTEP) Mission Training Plan (MTP) and Drills, Soldier's Training Publication (STP), and Officer Foundation Standards (OFS).
- Training is designed to be sequential by steps/ procedures and will progress through the skill levels. Institutional *and* unit training programs capitalize on TADSS technology through the use of Conduct of Fire Trainers (COFTs) and other devices that support efficient and effective training. The actual equipment is then saved and used only to validate the transfer of learning from device to system.
- Required training ranges and targets are safe, cost efficient, and training effective. The ranges and targets are realistic representations of the threat; duplicate or replicate the time, movement, countermeasures, signatures (including number), exposure times, and hit/kill indications; and provide feedback/performance scoring capability. Ranges and targets are environmentally nondestructive and are used to train using live-fire and simulated firing.

The US Army Air Defense Artillery School (USAADASCH), Ft Bliss, is the proponent for the 14R Bradley Linebacker operator/crew member institutional training and for commissioned and warrant officer basic and advanced training. The Advanced Individual Training (AIT) design is based upon the training concept to prepare the entry-level soldier to qualify as a skill level one (SL1) 14R. The combination of the institutional training strategy and the unit training strategy completes the training mix that technically develops the soldier through the skill levels. Training deficiencies exist due to no identified institutional transition training. The impracticality of producing a transition course does not negate the need for the untrained 14R (transitioning to a BL unit) to receive training on the system. Therefore, it is reasonable, cost-effective, and educationally sound to produce a multi-media training package that mirrors the operator new equipment training POI. As with the ODS multimedia package, the operator training package will be provided to the unit. Listed below are the institutional courses of instruction:

(1) 14R Bradley Linebacker Crew member AIT

The US Army Air Defense Artillery School, 6th ADA Brigade conducts 14R AIT. The training is a 14-week, 2-day program of instruction (POI) to train an initial entry soldier in MOS 14R10 in the following instruction:

- Air and ground vehicle recognition.
- MANPADS and SHTU/HTU training.
- Introduction to the BL; Operation/maintenance of the BL hull, turret, and weapons systems; and PMCS.

- Gunnery and TTP.

(2) 14B SHORAD Officer Basic Course (OBC) and Officer Advanced Course (OAC)

The US Army Air Defense Artillery School, 6th ADA Brigade conducts SHORAD officers' (14B) training. Both the Officer's Basic and Advanced Courses include BL capabilities instruction. The OBC POI includes a 2- week weapons track on the operational capabilities of the BL system. The OAC incorporates BL tactics into the POI small group processes.

(3) Master Gunner Training

The US Army Infantry School, Ft Benning, GA, conducts the 12-week course for selected BL NCOs. The course provides extensive training in BFV maintenance, range planning and execution, and all phases of gunnery training. The future design of the POI may include Bradley Fighting Vehicle variant instruction.

(4) Maintenance Training

The US Army Ordnance, Missile, and Munitions Center/School (USAOMMCS) is responsible for 27T maintenance personnel training for the Stinger system on the BL and will share maintenance training with USAOC&S for the 45T training base. The requirement for the materiel developer with the assistance of the training developer to provide CD-ROM training support deliverables is the same for both schools. The lessons must be available prior to the start date of resident instruction. The maintenance NET strategy is listed in paragraph 6a. and the device strategy to support maintenance training is captured in Annex H.

The Ordnance School trains Unit through Direct Support/General Support (DS/GS) level maintainers for the turret. The resident training will be based upon the maintenance I&KP training and the course deliverables provided by the materiel developer. The training developer will incorporate Bradley Linebacker instruction into the existing POI. System training utilizes the tactical turret trainer currently being used to train the 27E, Bradley TOW/TOWII DS/GS Missile Maintenance Technician, and the tactical M6 Linebacker systems. The turret trainer will have to be modified to the M2A2 ODS configuration. The fielding schedule for modification kits for the M2A2 ODS does not include the training equipment at OMMCS. This training deficiency will have to be resolved prior to the start of institutional training for the 27T. The institutional training consists of initial entry training that covers critical tasks in areas of inspection, trouble shooting, testing, fault isolating, diagnostics, remove and replace, adjustments, and alignments of components. Additionally, students will be taught tasks involving battle damage assessment and repair. Students will be evaluated on their ability to perform to standard. Other maintenance MOS training POIs which are associated with the Bradley Fighting Vehicle and the Bradley Linebacker but do not require a change to POIs are listed in Annex A.

The Ordnance, Missile, and Munitions Center/School provides Unit through DS/GS maintainer training for the 27T. The resident training will be based upon the maintenance I&KP training and the course deliverables provided by the materiel developer. The training developer will incorporate BL instruction into the existing Avenger System Repairer POI. System training will consist of initial entry training that will cover critical tasks in areas of inspection, trouble shooting, testing, fault isolating, diagnostics, remove and replace, adjustments, and alignments of components. Additionally, students will be taught tasks involving battle damage assessment and repair. Students will be evaluated on their ability to perform to standard. Training deficiencies exist due to no identified institutional transition training. The impracticality of producing a transition course does not negate the need for the untrained 27T (transitioning to a BL unit) to receive training on the system. Therefore, it is reasonable, cost-effective, and educationally sound to produce a multimedia training package that mirrors the maintenance new equipment training POI. As with the ODS multimedia package, the maintenance training package will be provided to the unit.

c. Unit Sustainment Training (Warfighter)

The unit commander and unit trainers accomplish the sustainment of individual and collective tasks through a unit training strategy that is tailored to the unit's mission-essential task list (METL), gunnery tables, and the combined arms training strategy (CATS). The training materials include the NET training support packages and TADSS. 14R BL crew members who are transitioning from a BSFV unit to a Linebacker unit can receive Linebacker specific training through the unit training program. The battalion S-3 monitors the training; maintains a training log; certifies when each lesson plan in the TSP has been taught; and posts the results of each exam. When the soldier completes Linebacker training, the S-3 will issue a certificate of training and annotate the soldier's training log, per AR 25-400. Collective training events, combat training center exercises, gunnery training, squad-level to battery-level training all combine to support the standards defined in the BL Army Training Evaluation Program (ARTEP) Mission Training Plan and Crew Drills. Individual training to support skill level 2 tasks is designed against the standards identified in the BL Soldier Training Publication (STP).

Bradley Linebacker shall incorporate Tactical Engagement Simulations (TES) Training Aids, Devices, Simulations, and Simulators (TADSS) to support the conduct of live Force-On-Force (FOF) training exercises at homestation, local training areas, maneuver Combat Training Centers (CTC), and deployed sites. Live FOF exercises are an integral element in assessing the ability of units to accomplish their mission essential and battle tasks in accordance with Army Training and Evaluation Program mission training plan standards.

With the introduction of the BL, the CATS (currently *in revision and being written per the final/approved revision of Chapter 14, FM 23-1*) will support aerial gunnery qualification with the Stinger missile system and the 25mm gun system. CATS is based upon the *building block approach and against the same qualification standards required of all 25mm crews*. The training approach allows individuals to be trained in basic skills before being integrated into squads. Squads then train progressively from basic tasks through integration as platoon, battery, battalion, or divisional elements performing wartime missions. Unit commanders have the latitude to integrate the CATS into the training of command and control; and maneuver, survival, and sustainment skills, as they apply to their respective METL.

Gunnery tables provide qualification standards and training strategies and focus on *preparing* soldiers to *qualify* and *perform* as crew members. The revised CATS will include the BL gunnery strategy with the BL crew training outlined in each table of the gunnery program. TADSS is used to train on nonqualifying tables. Standards outlined in the MTPs/STPs are the minimum acceptable levels of performance. All BL crew members are Stinger trained and must qualify with live fire on the applicable gunnery table.

7. Training Products

TADSS and targets for the institution and the field, tactical proficiency trainers and simulators, combat training centers and unit force-on-force training devices, and a multimedia training support package (TSP) *will be* fielded with the system. The lack of training due to decreased ammunition or TADSS development and distribution will adversely impact the combat readiness of all BL units and disqualify those units from participating in combat training center exercises. Overarching resource decrements may adversely impact the strategy in terms of ammunition, targets, and ranges used for gunnery training, ultimately impacting crew qualifications, deployment readiness, and individual soldier skill level advancement.

A major part of the Linebacker training subsystem is the system Training Support Package. The TSP should contain a full complement of training support products required to support training of the system in the institution, during NET, and in support of the unit training strategy. Wherever possible, TSP components will employ embedded training capabilities, be multimedia based, and/or use distance learning technologies. The TSP provides the unit with a training package that supports the NET. The TSP will contain (as a minimum) POI, lesson plans, technical manuals, instructor and student guides, and a course management plan. The *multimedia* TSP will be developed using tutorial instruction that is composed of "how to" self-taught modules with diagnostic testing tools available to identify soldier training proficiency by the module.

The following training products support NET, institutional, and sustainment training:

a. Publications

- TM 9-2350-284-10s-1; TM 9-2350-284-10s-2; TM 9-2350-457-12&P
- FM 44-43, BSFV/Bradley Linebacker Platoon and Squad Operations
- FM 44-64, SHORAD Battery and Battalion Operations
- ARTEP 44-177-14 MTP (BN, BTRY, PLT)
- ARTEP 44-177-14 DRILL
- STP 44-14R14-SM-TG

b. TADSS

The unit and the schoolhouse require a variety of training devices, simulators, and targets to support training plans. For a detailed matrix of those devices required for gunnery training refer to the basic gunnery tables defined in FM 23-1 and the BL Combined Arms Training Strategy (CATS) publication. The TADSS matrix in Appendix H of this STRAP further defines the training device support. The following TADSS and targets support BL operator and/or maintainer institutional and/or unit training:

- Bradley M2A2 ODS COFT with future upgrades to support the A3 Bradley build (to be developed).
- Precision Gunnery System (PGS) Training Devices (25mm).
- PGS future software modifications to train Stinger missile engagement (to be developed).
- 1/5th Scale Aerial Target availability.
- Flank BMP
- Frontal BMP
- Frontal BTR
- Frontal Truck
- RPG Team
- HIND
- Through Site Video (TSV) Devices
- A turret mock up device
- 25mm gun stands
- Field Handling Trainers (FHT)
- Stinger Troop Proficiency Trainers (STPT)
- Captive Flight Trainer (CFT)
- Bradley Linebacker Table Top Trainers (TTT) (to be developed).
- Force-on-force training (FOFT) devices for homestation and CTC's (to be developed).
- Embedded devices for the Bradley Linebacker M2A2 and A3 (to be developed).
- Bradley Advanced Training System (BATS), Bradley M2A3
- Weapons Effects Signature Simulator (WESS) (CTC use)
- Close Combat Tactical Trainer (CCTT) modified to add the Linebacker tactical module (to be developed).
- Air Defense Combined Arms Tactical Trainer (ADCATT) (integrated for CATT).
- BFV Desk Top Crew Station Trainer (CST) (See Bradley Fight Vehicle A3 STRAP/ORD TSR).
- 27T Maintenance Trainer (to be developed).

c. NET TADSS (M2A2 ODS Bradley Linebacker)

- BFV TADSS identified in the BFV STRAP for NET (A2)
- Captive Flight Trainers (A2 NET)

- Radio Controlled Miniature Aerial Targets (RCMAT) (A2)
- Precision Gunnery System (Stinger Modification) (A2 NET)
- 27T Maintenance Trainer (A2 NET)

d. Multimedia Products

The materiel developer will provide, as a minimum, an expanded version of the CD-I products being used for M2/A2 ODS NET that will include the air defense instruction and maintenance instruction. As previously stated, this multimedia component of the TSP will initially support NET and further support unit and institutional training.

e. System Hardware/Software

Bradley Linebackers (6) will be needed to support the training at USAADASCH; (2) BL will be used for institutional training at OMMCS. Both institutions will require the full complement of Forward Area Air Defense (FAAD) C3I equipment (as stated in the NET Strategy).

8. Training Support

a. Distance Learning Infrastructure

Under the total Army training concept, Bradley Linebacker training is included for conversion to the POI digitization plan. Currently, USAADASCH is defining and designing the total digitized training strategy.

b. Facilities

The USAADASCH Classroom XXI training for Bradley Linebacker is scheduled for FY99 at the institution. The distance learning strategy will be realized during the FY98 time frame through the establishment of (3) classrooms to support unit training for (3) air defense brigades at Ft. Bliss. The classroom connectivity design supports displaced unit training via the tie-in to the Guardnet which supplies distance learning capability to 50 states and the territories where ADA units are assigned. The concept supports Army XXI training at 3 levels: Warrior XXI for self-development; Warfighter XXI for collective training; and WarMod XXI to support product improvements. The institutional range requirement is 400 acres of firing range.

c. Ammunition

Bradley Linebacker unit training ammunition requirements equate to (644) 25mm rounds per year, per fire unit. 14R institutional training ammunition requirements are (71) 25mm rounds per student, per class, per year and (200) 7.62 rounds per student, per class, per year. The optimum class size is (24) students; the average number of classes per year is (10).

9. Post-Fielding Training Effectiveness Analysis (PFTEA)

When resources permit and USAADASCH has the manpower to support the PFTEA processes, a PFTEA will be prepared. The process includes coordinating the evaluations of POIs and lesson plans; personnel selection criteria; and Situation Training Exercises (STX). The New Equipment Training Team (NETT) analysis of demonstrated skills by unit personnel provides data for the evaluation. The data collected by the NETT and the results of the analysis will be staffed throughout the institution. The training departments will use this information to refine and update the institution's training programs.

Annex A - Bradley Linebacker Target Audience Matrix

Courses Matrix				
Courses Affected by the Bradley Linebacker (BL)				
Functional and Professional Courses	USAADASCH	OMMCS	OC&S	USAIS
14R Crew Member	X			
SHORAD Company Grade Officer	X			
27T Avenger Repairer		X		
917A		X		
45T BFVS Turret Mechanic			X	
913A			X	
45B, 4G, 45K			X	
63G, 63H, 63T			X	
Master Gunner				X

ANNEX B Institutional Training

Military Occupational Specialty (MOS) (present data by MOS by school)
Training Strategy for Advanced Individual Training (AIT): 14R
Location: Ft. Bliss, TX
Lesson Plans: 4Q FY98
Course Start: 20 Oct 98
Classes per Year: FY 98/16; FY99/13; FY00/16
Student Load per Fiscal Year (FY): FY98/395; FY99/306; FY00/371
Integrated Training Strategy for SHORAD Officer Courses
Location: Ft. Bliss, TX
Lesson Plans: OBC - 1Q FY98; OAC - 1Q FY99
Course Start: OBC - 3Q FY98; OAC - 3Q FY99
Classes per Year: OBC - FY 98/3; FY99/4; OAC - FY 98/4; FY99/4
Student Load per FY: OBC - FY98/275; FY99/268; OAC - FY 98/140; FY99/170
Analysis Requirements
Training Requirement Analysis System (TRAS) Documents
Individual Training Plan: 1Q FY 98
Course Administrative Document: 2Q FY98
Program of Instruction: 4Q FY 98
Training Support Required: Refer to Paragraphs 7 and 8 and Annex H

ANNEX B Institutional Training

Military Occupational Specialty (MOS) (present data by MOS by school)
Training Strategy for Advanced Individual Training (AIT): 27T
Location: US Army Missile & Munitions Center/School (OMMCS) Redstone Arsenal, Alabama
Lesson Plans: To be completed before the start date.
Course Start: TBD
Classes per Year: FY 98/8; FY99/8; FY00/8
Student Load per Fiscal Year (FY): FY98/64; FY99/64; FY00/64
Integrated Training Strategy for the Warrant Officer Basic Course (WOBC) 917A
Location: US Army Missile & Munitions Center/School (OMMCS) Redstone Arsenal, Alabama
Lesson Plans: To be completed before the start date.
Course Start: TBD
Classes per Year: FY 98/2; FY99/2
Student Load per FY: FY98/16; FY99/16
Analysis Requirements
Training Requirement Analysis System (TRAS) Documents
Individual Training Plan:
Course Administrative Document:
Program of Instruction:
Training Support Required: 2 M2A2 ODS Bradley Linebackers; Refer to Annex H

ANNEX B Institutional Training

Military Occupational Specialty (MOS) (present data by MOS by school)
Training Strategy for AIT: 45B, 45G, 45K, 45T, 63G, 63H, 63t
Location: USAOC&S, Aberdeen Proving Ground, MD
Lesson Plans: To be completed by course start date.
Course Start: TBD
Classes per Year: FY 98/TBD; FY99/TBD; FY00/TBD
Student Load per Fiscal Year (FY): FY98/TBD; FY99/TBD; FY00/TBD
Integrated Training Strategy for Warrant Officer Courses 913A, 915A
Location: USAOC&S, Aberdeen Proving Ground, MD
Lesson Plans: To be completed by course start date.
Course Start: TBD
Classes per Year: FY 98/TBD; FY99/TBD
Student Load per FY: FY98/TBD; FY99/TBD
Analysis Requirements
Training Requirement Analysis System (TRAS) Documents
Individual Training Plan:
Course Administrative Document:
Program of Instruction:
Training Support Required: Refer to Annex H

Annex C - Unit Training Strategy for Bradley Linebacker

1. Individual Training:			
a. Strategy: Individual skills will be sustained through daily operational training, crew drills, situational training exercises, field training exercises, and use of the ARTEP Mission Training Plan. Commanders ensure individual proficiency per applicable soldier’s manuals; e.g. to maintain individual skill proficiency on the M2A2 ODS Bradley Linebacker, soldiers designated to operate/maintain it will train as follows:			
MOS	Training Event		Frequency
14R10/20/3014R 40	MOS Training		Weekly
b. Products: Required to sustain individual skills.			
Product	Required Date	Resource Requirement	Responsible Agency
CATS	4QFY98	In house	CATD, USAADASCH
MTP/Crew Drill	4QFY98	In house	CATD, USAADASCH
Tables			
14R STP	4QFY98	In house	CATD, USAADASCH
27T STP	4QFY98	In house	USAOMMCS
45T STP	4QFY98	In house	USAORDC&S
63T STP	4QFY98	In house	USAARMS
Operator’s TSP	4QFY98	System Contract	MATERIAL DEVELOPER/TRADOC
Maintainer’s TSP	4QFY98	System Contract	MATERIAL DEVELOPER/TRADOC
Vehicle TM	4QFY98	System Contract	MATERIAL DEVELOPER
2. Collective Training:			
a. Strategy: The collective skills to employ and maintain the system are learned and sustained through repetitious application of crew drills, STX, command post exercises, and training with the close combat tactical trainer, gunnery, and tactical simulations. ADA doctrine and tactics will be incorporated. Training will be conducted in accordance with the applicable MTP. To sustain collective proficiency, the following are recommended training echelons, events, and frequencies:			
Echelon	Event		Frequency
Battalion	Gunnery		Monthly
	Train-up (COFT; TTT;IMTS;STPT;CFT; THT)		Monthly
	Bradley Linebacker Gunnery Skills Test (BGST)		Quarterly
	Device Based Gunnery Tables-I-IV		Semiannually
	Intermediate Gunnery Tables V-VIII (Crew Live Fire)		Semiannually
	Advanced Tables - IX/X (Aerial Gunnery)		Annually

a. Strategy (continued):			
Echelon	Event		Frequency
Battalion	Maneuver		
	CPX (CCTT)		Annually
	CFX (BBS)		Quarterly
	CFX		Annually
	DEPEX		Quarterly
	FTX		Semiannually
	FTX-Evaluation		Annually
Battery	Maneuver		
	TEWT (Janus)		Three per year
	CFX (CCTT)		Semiannually
	FCX		Semiannually
	FTX		Semiannually
Platoon	Maneuver		
	TEWT (Janus)		Quarterly
	FTX (CCTT)		Annually
	FTX (PGS; 1/5TH RCMAT)		Semiannually
Sect/Platoon	Gunnery		
Squad/Crew	Table-I-VI (PGS; 1/5TH RCMAT)		Semiannually
	Table-VIII (PGS; 1/5TH RCMAT/Live Fire)		Semiannually
	ADV Table-IX/X (PGS; 1/5TH RCMAT/Live Fire)		Semiannually
	CALFEX		Annually
b. Products: Required to support collective training.			
Product	Required Date	Resource Documents	Responsible Agency
Crew Drills	4QFY98	In house	CATD, USAADASCH
Gunnery Tables	4QFY98	In house	CATD, USAADASCH
MTP	4QFY98	In house	CATD, USAADASCH
STX	4QFY98	METL	UNIT
TSOP	4QFY98	METL	UNIT
ARTEP	4QFY98	In house	CATD, USAADASCH
FM	4QFY98	In house	CATD, USAADASCH
Vehicle TM	4QFY98	System Contract	MATERIAL DEVELOPER

Annex D - Training Development Milestone Schedule.

Individual Training Plan 14R BL Crew member

Milestone:

1. Initial Individual Training Plan (ITP) submitted.
2. Annotated task list submitted.
3. Course Administrative Data submitted.
4. Training Program Worksheet (TPW) submitted.
5. ITP submitted.
6. POI submitted.
7. Resident course start date.

Date

FY97
FY96
FY97
FY97
FY99

Army Correspondence Course Program

Milestone: N/A

1. Requirement identified and submitted for approval.
2. Requirement approved by HQ TRADOC.
3. Development initiated.
4. Advance breakdown sheet submitted.
5. Camera-ready mechanicals submitted.
6. Sub-course material ready for distribution.

Army-wide Doctrine and Training Literature Program (ADTLP)

Milestone:

1. Requirements identified.
2. Draft ADTLP changes validated.
3. Field Manual (FM) outlines approved.
4. FM coordinating draft completed.
5. Print request initiated.
6. Approved camera-ready copies and comprehensive dummy submitted.
7. Printing and distribution completed.

Date

FY95
FY96
FY96
FY97
FY98
FY98
FY98

Soldiers' Training Publications

Note: Includes the soldiers' manual (SM), Army Training and Evaluation Program (ARTEP), and trainers' guide (TG).

Milestone:

1. Analysis completed.
2. Draft SM, ARTEP, and TG.
3. ATSC staffing.
4. Camera-ready mechanicals submitted.
5. Distribution completed.

FY95
FY96
FY97
FY98
FY98

Annex D - Training Development Milestone Schedule, Continued

Interactive Multimedia Instruction (IMI)/Distance Learning

Milestone:

1. Requirements identified and submitted for approval.
2. Requirements approved by ATSC and TRADOC.
3. Identify resources.
4. Develop and validate courseware.
5. Master materials to ATSC for replication and distribution.
6. Replication and distribution completed.

FY98

Training Effectiveness Analysis (TEA)

Milestone: Based Upon the BSFV-MUA TEA 20 NOV 95

1. Interim TEA developed.
2. TEA updated for Milestone Decision Review I.
3. TEA updated for Milestone Decision Review II.
4. TEA updated for Milestone Decision Review III.
5. Post-Fielding TEA (PFTEA) planned.

FY99

DA Audiovisual Production Program (DAAPP)

Milestone: N/A

1. High-risk tasks and jobs identified.
2. Validated in storyboard.
3. DAAPP requirements submitted to ATSC.
4. Requirements approved by DA.
5. Production initiated.

Training Aids, Devices, Simulations, and Simulators (TADSS)

Milestone:

1. High risk, hard-to-train tasks identified.
2. TADSS concept validated.
3. Need for TADSS identified.
4. TADSS incorporated into the STRAP.
5. Analytical justification via TEA.
6. Training ORD developed, if required.
7. TADSS effectiveness validated.
8. TADSS incorporated into the operational requirements document (ORD).
9. MOS-specific milestone/requirements for TADSS developed and incorporated in integrated training strategy (ITS).

Date
FY95
FY95
FY95
FY96
FY95
FY95
FY96
FY96

Annex D - Training Development Milestone Schedule, Continued

Facilities

Milestone:

1. Range and Facility requirements identified.
2. Construction requirements submitted to MACOM.
3. Development of construction requirements completed.
4. Requirements validated and updated.
5. Supporting requirements identified and availability coordinated.
6. Installation and other construction requirements submitted to MACOM.
7. Refined construction requirements and range criteria forwarded to MACOM.
8. Construction initiated.

FY97
N/A
N/A
N/A
N/A
N/A
N/A
N/A

Training Ammunition

Milestone:

1. Ammunition identified.
2. Tentative validation of ammunition requirements.
3. Requirements included in the ORD.
4. Ammunition item developed.
5. Validation and test complete.
6. Ammunition requirements in the ITP.
7. Requirements provided to installation/MACOM manager.
8. Requirements included in DA Pam 350-38.
9. Production.

FY97
FY97
FY97
FY97
FY98

Annex E - References

**The following references pertain to the operational testing and subsequent fielding of the
Bradley Linebacker Air Defense Artillery System:**

Line-of-Sight Forward Heavy (LOS-F-Heavy) ROC,1987

System MANPRINT Management Plan (SMMP), 1 JUL 1995

Operational Requirements Document (ORD), Nov 96

Basis of Issue Plan (BOIP), 5 FEB 97 - per PM-Bradley letter dated 5 FEB 1997,
“Linebacker/MUA fieldings were scheduled as if they were MUA fieldings since a
Linebacker delivery schedule is not available.”

New Equipment Training Plan (NETP) Number: TAC97032

Army Modernization Information Memorandum (AMIM) Number: 009 (M2A2/A3)

Annex F - Coordination

AGENCY	CONCUR	NONCONCUR	COMMENTS
USAADASCH			
6TH BDE	X		<i>Accepted</i>
CATD	X		<i>Accepted</i>
DCD	X		<i>Accepted</i>
TRADOC System Manager	X		<i>Accepted</i>
ATSC (Initial Review)	X		<i>Accepted</i>
USAOMMCS	X	X (Maint. I&KP TNG Plan)	<i>Accepted.</i>
USAOC&S	X		
USAIS			TB Reviewed
PM-Linebacker			TB Reviewed
PM-Stinger			TB Reviewed

Annex G - Acronyms

Legend	
Acronym	Meaning
AC	Active Component
ADA	Air Defense Artillery
ADCATT	Air Defense Combined Arms Tactical Trainer
ADCCS	Air Defense Command and Control Systems
AGTS	Advanced Gunnery Training System
AIT	Advanced Individual Training
ARTEP	Army Training and Evaluation Program
ASIOE	Associated Support Items of Equipment
BFV	Bradley Fighting Vehicle
BL	Bradley Linebacker
BSFV	Bradley Stinger Fighting Vehicle
BOIP	Basis of Issue Plan
BN	Battalion
BTRY	Battery
C ³ I	Command, Control, Communications, and Intelligence
CALFEX	Combined Arms Live Fire Exercise
CASCOM	Combat Arms Support Command
CATS	Combined Arms Training Strategy
CCTT	Close Combat Tactical Trainer
CD-I	Computer Disc-Interactive
CD-ROM	Computer Disc-Read Only Memory
COFT	Conduct of Fire Trainer
CFX	Command field exercise
CM	Cruise Missile
CPX	Command post exercise
CSA	Chief of Staff of the Army
CST	Crew Station Trainer
DS/GS	Direct Support/General Support
DTT	Doctrine and Tactics Training
EPLRS	Enhanced Position Location Reporting System
ETM	Extension training materials

FAAD	Forward Area Air Defense
FHT	Field Handling Trainer
FM	Field manual
FOFT	Force-on-Force Trainer
FTX	Field Training Exercise
FUED	First Unit Equipped Date
FW	Fixed Wing
HOTT	Hands-On Turret Trainer
HTU	Handheld Terminal Unit
ICOFT	Institutional Conduct of Fire Trainer
IFF	Identification Friend or Foe
I&KP	Instructor & Key Personnel
ILSMT	Integrated Logistics Support Management Team
IMTS	Improved Moving Target Simulator
IOC	Initial Operational Capability
LSA	Logistics Support Analysis
MANPADS	Man Portable Air Defense System
METL	Mission Essential Task List
MUA	MANPADS Under Armor
MOS	Military occupational specialty
MTP	Mission training plan
NCO	Noncommissioned Officer
NET	New Equipment Training
NETP	New Equipment Training Plan
NETT	New Equipment Training Team
OAC	Officer Advanced Course
OBC	Officer Basic Course
ODS	Operation Desert Storm
OFS	Officer Foundation Standards
PFTEA	Post-Fielding Training Effectiveness Analysis
PGS	Precision Gunnery System
PLGR	Precision Lightweight Global Positioning System Receiver
PLT	Platoon
PM	Program Manager
PMCS	Preventive Maintenance Checks and Service
POI	Program of Instruction
QQPRI	Qualitative and Quantitative Personnel Requirement Information
RC	Reserve Component
RW	Rotary Wing

SAT	Systems Approach to Training
SHORAD	Short Range Air Defense
SHTU	Simplified Handheld Terminal Unit
SINCGARS	Single Channel Ground and Airborne Radio System
SL1	Skill Level 1
STP	Soldier Training Publication
STRAP	System Training Plan
STPT	Stinger Troop Proficiency Trainer
STX	Situational Training Exercise
SVML	Standard Vehicle Mounted Launcher
TADSS	Training Aids, Devices, Simulators, and Simulations
THT	Tracking Head Trainer
TM	Technical manual
TOW	Tube-launched, optically-tracked, wire-guided
TRADOC	US Army Training and Doctrine Command
TSP	Training Support Package
TSOP	Tactical Standing Operating Procedures
TSV	Through-Sight Video
TTP	Tactics, Techniques, and Procedures
TTT	Table Top Trainer
UAV	Unmanned Aerial Vehicle
USAADASCH	United States Army Air Defense Artillery School
USAOC&S	United States Army Ordnance Center and School
USAOMMCS	United States Army Ordnance Missile and Munitions Center and School
WESS	Weapons Effects Signature Simulator

Annex H - TADSS Requirements

1. **Purpose:** The use of training devices permits training to be performed under realistic but simulated conditions while protecting the environment and complementing the requirement to reduce ammunition costs. The institutional and unit philosophy to train ADA soldiers and leaders as “we fight” is accomplished through the extensive use of TADSS. Successfully *achieving* and *maintaining* ADA unit readiness to conduct force protection operations in the combined arms arena using sophisticated ADA tactical systems is a complicated enterprise that is directly tied to the technology that produces training support simulations and devices. State-of-the-art, requirements-based, reliable embedded training devices are needed to ensure soldier proficiency of critical skills. The use of TADSS is a training strategy that reduces training costs, and, in general, provides a safe training environment that reserves the tactical equipment for final evaluations or qualifications.

Device requirements for the Bradley Linebacker ODS (M2/A2) and the future Bradley Linebacker (M2/A3) support the BL force package fielding. The result is a training devices’ package that supports Bradley Linebacker NET, sustainment, institutional, and combat training center training; is user friendly and system compatible; and captures/replicates BL individual and collective tactics, techniques, and procedures. The devices’ training requirements include but are not limited to the use of Interactive Courseware (ICW), virtual scenarios, and after-action capabilities with system embedded TADSS as the preferred method of device design. To ensure the realization of the TADSS strategy, TADSS development must be concurrent with the BL system development. The system PM is responsible for the development, integration, and life cycle management of Training Aids, Devices, Simulations, and Simulators (TADSS) IAW AR 350-38.

2. **Overview:** The following is an overview of TADSS requirements:

Training Aids, Devices, Simulations, and Simulators (TADSS) Requirements for the Bradley Linebacker				
Purpose/Function	NET	Institution	CTC	Unit
• Gunnery	X	X		X
• Maneuver		X		X
• Maintenance	X	X		X
• Force-on-Force		X	X	X
• Simulation				
Crew		X		X
Functional				X
Force-level			X	X
• Simulator		X		
• Basic Skills Trainer	X	X		X
• Assembly and Disassembly		X		
• Driver Trainer	X	X		X
• Embedded Training				
Operator	X	X		X
Crew	X	X		X
Functional				X
Force-level			X	X

3. TADSS Strategy: For soldier sustainment and gunnery training, institutional, homestation and combat training centers (CTC) training, the device training needs are addressed in separate subparagraphs. These subparagraphs summarize the most appropriate devices (if known), describe new/desired training capabilities and required characteristics, explain the use, and list basis of issue for the unit, the institution, and CTC when appropriate.

a. Embedded Training (ET): An Embedded Training (ET) capability is required to ensure effective sustainment of critical skills. Embedded Training will be integrated into institutional and unit training. Embedded training is desired for the Linebacker to train engagement operations. This training need transcends the force package builds and remains a constant for all projected Linebacker systems beyond the M2A2 ODS variant. The ET provides real time, free play, and interactive simulation of operations for optimum institutional and sustainment training. This requirement supports individual, crew, collective and unit training by providing simulated problem situations that replicate those situations that soldiers will encounter in actual mission operations. ET allows soldiers to maintain proficiency in tactical decision making methods and operational procedures.

b. Conduct of Fire Training (COFT). In the absence of embedded training devices for M2A2 ODS Linebacker system, a stand-alone *conduct of fire* trainer that can be 1) used during the day or night, 2) is modular, mobile, computer-based, and complete with an instructor and student stations, 3) replicates gunnery training for **all** the Linebacker weapons' systems, and 4) is designed to train both the commander and gunner is necessary for both the institutional training base and the unit sustainment training program. COFT devices should be capable of full integration with Army Distributed Interactive Simulation (DIS)/ Higher Level Architecture (HLA) systems and interface with the Close Combat Tactical Trainers (CCTT)/Synthetic Environment – Core (SE-Core). The COFT device is the primary training device at the institution and the primary sustainment trainer in the field. BOI: Institution (TBD); Unit (TBD).

The currently fielded Unit Conduct of Fire Trainers (UCOFT) at the institution and the units must be maintained and upgraded for M2A2 ODS. ADA Units will continue to utilize these for 25mm portion of gunnery until the desired COFT is obtained.

c. Precision Gunnery Trainer: The Precision Gunnery System (PGS) training device is required for Linebacker 25 mm training at the school and in the field to support gunnery. In order to capture targeting and engagement procedures of the BL (M2/A2 ODS and A3) Stinger missile system, modification to the PGS software to represent missile engagement and aerial targetry symbology is needed. Coupled with the 1/5th scale remotely controlled aerial target and through the use of the optical retro-reflector system, the PGS provides ADA the unique ability to train 25mm *aerial* gunnery. With software and cabling upgrades, the PGS can eliminate the Stinger system aerial engagement training deficiencies allowing full realization of the BL gunnery training. BOI: Institution (5); Unit (5 per BTRY); ACR (10)

d. Force-on-Force Trainer (FOFT): For the institution, the field, and the combat training centers (CTCs), the Bradley Linebacker FOFT must simulate the performance capability of the Stinger missile, be laser-based, represent the field of view of the missile, replicate the range of the missile, maintain boresight stabilization during “shoot-on-the-move” engagements, provide tactical simulation of missile and gun firing, weapons effect signature simulation, and be compatible with the CTC instrumentation of the battlefield air defense requirements. The TADSS will provide the necessary instrumented data listed below to support training at the CTC's

- Player ID (platform ID)
- Position/Location (GPS)
- Weapons Codes (missile/25mm) compatible with current and future instrumentation
- Weapons Azimuth/Elevation
- Missile Activation
- Missile Lock

- Administrative Resurrect/Kill
- IFF (Identification Friend or Foe) Interrogation
- Missile Uncaged (Time uncaged to caged)
- Trigger pull
- Target Range at Trigger Pull
- Status (kill, mobility, communications, weapons)
- Missile count remaining
- General requirements
- The CTC-IS must be able to monitor voice/digital radio traffic.
- Record heads-up display sight image/FLIR display image.

The system TADSS will be capable of Force-On-Force interactive play at HTI, CTC, and deployed training sites by interfacing with TES, CTC-IS, and HTI systems. The system TADSS must provide for connectivity to the CTC and HTI-IS, support battlefield simulations, collect data for use in After Action Review (AAR) and system analysis, and provide necessary battlefield control. The system TADSS must collect and transmit battlefield simulation data to provide appropriate levels of operator feedback at CTCs, drive C4I systems, and designed support connectivity to TES and HTI-IS. BOI: NTC (15); JRTC (5); CMTC (10); Unit/Homestation (8 per BTRY); Institution (5)

e. Table Top Trainer (TTT): The TTT for Linebacker fills the mobile, flexible, and deployable training device void. It should represent the M2A2 ODS configuration; present ADA scenario software for all engagement systems on the Linebacker, incorporate the commander's training part and command and control capability, and serve as a flexible, cost-effective method to train target detection and engagement at the institution and the unit. The TTT will be used at unit level in conjunction with tactical equipment to sustain engagement skills at all CONUS and OCONUS units equipped with Linebacker. The TTT should provide real time, free play, stationary and remote operations in Day/Night and adverse weather tactical operations. The TTT should provide history, action, summary reports, transfer of skills and knowledge, and hardcopy printouts as required. The TTT will provide the capability for conducting training without the use of special support equipment. The TTT and its manuals, hardware, and software will be unclassified and require no unusual storage, and will be shipped with the device to the units. Hardware and/or software common to other SHORAD devices should be evaluated for use in the TTT. The communications must be compatible with that of the Linebacker. The transportability requirements for the TTT should not exceed that of a two (2) man lift. The Preplanned Product Improvements (P3I) should parallel the P3I of the system and should be designed for growth potential to allow for modifications. The TTT must simulate those FAADS C3I subsystem functions required for Slew-To-Cue engagements. Future TTT development could also provide the air defense tactical link to the close combat tactical trainer and when linked via an instructor station, may fulfill the Stinger COFT requirement. The TTT will be modified to accommodate system improvements. BOI: Unit (1 per BTRY); Institution (5); ACR (2).

f. Through Sight Video (TSV) Camera: The vehicle-appended TSV camera provides the institution and the unit a video and sound recording tool for the evaluation of gunnery or tactical engagement exercises. Appended to a vehicle, it captures the audio commands, engagement sound simulations, and records engagements. BOI: Unit (5 per BTRY); Institution (5); ACR (10)

g. Stinger Troop Proficiency Trainer (STPT): The Linebacker training includes shoot-on-the-move and dismounted Stinger operations/engagement. The STPT (computer-based device which generates digitized targets and background onto the weapon system's optics) trains weapon system operations, target acquisition, tracking and engagement. With the elimination of the Improved Moving Target Simulator (IMTS), the STPT is a flexible, efficient, and state-of-the-art device that will replace and exceed the capabilities of the IMTS. (IMTS is not identified as a Bradley Linebacker requirement; however, the continued use of the IMTS is an interim solution for MANPADS training). BOI: Unit (1) per BTRY; Institution (5)

h. Captive Flight Trainer (CFT): The CFT is a simulated Stinger-RMP missile guidance assembly in a launch tube that is used to simulate weapon system operation in captive flight. The CFT is used to train

operator tracking and engagement skills. The CFT is used in conjunction with **1/5th Scale Targets** to train engagement procedures with live targets. It provides a cost effective means to train and sustain critical gunnery skills. The launch tube assembly is similar to the missile round in weight, size, and external appearance except that it has a fly-away simulator module mounted on the forward end of the launch tube. A guidance section is located in the forward end of the launch tube. The ballast section is located just aft of the guidance section and simulates the weight and volume of the missile warhead section, flight motor, and launch motor. In addition, a sight assembly is attached to the launch tube. The sight assembly is maintained in the stowed position, as it is not used with Linebacker for training purposes. The captive flight trainer is shipped in a container which is identical in appearance to the weapon round container. The top corners of the shipping container are marked with 2.5 inch blue squares. The container provides protection for the trainer during shipping and storage. BOI: Institution (6); Unit (1 per Fire Unit).

i. Tracking Head Trainer (THT): The M160 RMP THT is used in the institution and in the field to train the same functional performance characteristics as the Reprogrammable Microprocessor (RMP) weapon round without launching the missile. It also provides additional performance information to the gunner indicating the results of an engagement sequence through the performance indicator. The training set is powered by a rechargeable trainer battery that powers the seeker head, associated electronics and performance indicator. Information about target acquisition is output through a miniature speaker to the gunner's ear. The IFF simulator provides the gunner simulated random IFF tones so the gunner can experience different engagement sequences. BOI: Institution (6); Unit (2 per Btry).

j. Field Handling Trainer (FHT): The FHT is used in the institution and in the field to train missile handling procedures. It replicates the Stinger missile in size, appearance, and weight. The FHT consists of a "dummy" separable gripstock with an inert IFF antenna and a Stinger launch tube assembly without its active internal parts and electronics. The FHT may employ an expended gripstock with electronics removed and an expended tactical, which has been ballasted to simulate the tactical weapons weight and center of gravity. The FHT is used with a dummy BCU and dummy IFF interrogator (with interconnecting cable) to provide practice in basic handling skills to improve sighting and ranging techniques and reaction times. Controls and mechanical operations are the same as the tactical weapon; however, target acquisition indications are not provided. BOI: Institution (24); Unit (4 per Fire Unit).

The BOI for this device justifies the continuation of the current inventory.

k. 25mm Gun Stands: Used by the institution to train gun theory and function and maintenance. BOI: (8).

l. Dummy Rounds: Unit BOI:

25mm = (60) rounds per FU + platoon leader vehicle (600 per BTRY).

7.62 dummy rounds = (4000) per BTRY.

2 Tow missile simulator rounds for the platoon leader vehicle = (4) per BTRY.

m. Close Combat Tactical Trainer (CCTT): The air defense (Linebacker) tactical module to the CCTT/SE-Core provides full crew simulated modules that operate and interact on a computer-generated battlefield. The system must accommodate individual crews to a full-size battalion task force training. The Linebacker must also be represented in the CCTT Semi-Automated Forces (SAF), Warfighters' Simulation 2000 (WARSIM), ONESAF, and visual modules. The device is a computer driven, distributed processing, networked simulation system which provides collective, combined arms training for air defense units on a simulated battlefield, in real time against an array of threats under realistic combat conditions (synthetic environment). It provides battle-focused training on "how to fight" ADA weapon systems in a combined arms setting for institutional and a collective training device for unit training. The CCTT serves soldiers at various training sites throughout FORCSOM; the ADA module or "set" can provide an air defense virtual trainer for the institution. Whereas the COFT is designed and used primarily for gunnery, the CCTT will take that training to the next level – maneuver and combined arms tactical training. This device is conceptual at this time. BOI: ADA SET per CCTT required for ADA. (NOTE: The availability of COFTs that are fully ADA capable and integrated into SE-Core may offset the need for some of these modules.)

n. Bradley Desk Top Crew Station Trainer: A computer driven classroom training system that replicates the voice and digital communications capability of the actual Bradley system is required to help train and sustain the technical and perishable skills peculiar to the system. Through the use of communications protocols, the CST can be used to train crewmen, platoon leaders, battery commanders, S3s, and battalion commanders in battlefield awareness and the use of digitally transmitted information. Rehearsal of operations as well as planning for contingency measures in the event of degraded operations can also be trained. BOI: Institution (12) Unit. (6 per BN).

o. BRADLEY LINEBACKER INSTITUTIONAL MAINTENANCE TRAINER (BLIMT). The BLIMT is a training device required to train maintainers, MOS 27T, in the institutional environment on Linebacker peculiar skills and tasks. The BLIMT will be a training device utilizing existing Bradley Fighting Vehicle turrets, which are dismounted from the tactical vehicle and mounted on training platforms. The turrets are not moveable. The BLIMT will use fault scenarios, which will train 100 percent of all identified critical tasks. The tasks selected for training will be those identified during the Logistical Support Analysis (LSA) process. BOI: Institution (2) ODS Modified Turret Trainer; (2) Linebacker Modified Turret Trainers

The training device will consist of the following:

- (1) A dismounted Bradley Fighting Vehicle, Operation Desert Storm (ODS) configuration turret with the Linebacker modification applied.
- (2) Power requirements for each turret station.
- (3) Task scenarios identified in the LSA process and training analysis completed for selection of task training media via the BLIMT.

All tasks trained on the BLIMT will be directly transferable to the tactical system. The basic distribution plan will identify four (4) turrets in the Basic Bradley configuration for modification to Linebacker turrets. Those assets are currently available at OMMCS. All student responses will be reported via instructor observation of the conduct of the practical exercise. Existing monitoring and operational capability will not be impacted by application of the BLIMT to the Bradley turrets.

The required targets for the institution and the unit are listed below:

a. 1/5th Scale Radio Controlled Miniature Aerial Target: The availability of the target is programmed through the unit training plan and supported by the Targets Management Office, STRICOM.

b. Flank & Frontal BMP; Frontal BTR; Frontal Truck; HIND; and RPG Team: These targets are used to support the basic gunnery tables for the 25mm.